EVOLUTION

EV042

42mm (1-5/8")
MAGNETIC DRILLING SYSTEM

Instruction Manual

Read instructions before operating this tool.

Guard omitted for illustrative purposes only.
This Instruction Manual was originally written in (UK) English.

Original Instructions

Read instructions before operating this tool.

TABLE OF CONTENTS **PAGE**

Introduction 03
Guarantee 03
Technical Specification 04
Explanation of Labels and Symbols 05
Intended use of this Power Tool 05
Prohibited use of this Power Tool 05

SAFETY PRECAUTIONS
Electrical Safety 06
Outdoor Use 06
General Power Tool Safety Instructions 07
Specific Safety Instructions 08

GETTING STARTED
Unpacking 11
Machine Overview 12
Assembly and Preparation 14
Operating Instructions 15

MAINTENANCE
Environmental Protection 19
Service Parts Diagram 20

DECLARATION of CONFORMITY **22**

IMPORTANT INFORMATION

Please read these operating and safety instructions carefully and completely.

For your own safety, if you are uncertain about any aspect of using this equipment please access the relevant Technical Helpline, the number of which can be found on the Evolution Power Tools website. We operate several Helplines throughout our worldwide organization, but Technical help is also available from your supplier.

WEB www.evolutionpowertools.com/register

Congratulations on your purchase of an Evolution Power Tools Machine. Please complete your product registration 'online' as explained in the A5 online guarantee registration leaflet included with this machine. You can also scan the QR code found on the A5 leaflet with a Smart Phone. This will enable you to validate your machine's guarantee period via Evolutions website by entering your details and thus ensure prompt service if ever needed. We sincerely thank you for selecting a product from Evolution Power Tools.

EVOLUTION LIMITED GUARANTEE.
Evolution Power Tools reserves the right to make improvements and modifications to the product design without prior notice.

Please refer to the guarantee registration leaflet and/or the packaging for details of the terms and conditions of the guarantee.

Evolution Power Tools will, within the guarantee period, and from the original date of purchase, repair or replace any goods found to be defective in materials or workmanship. This guarantee is void if the tool being returned has been used beyond the recommendations in the Instruction Manual or if the machine has been damaged by accident, neglect, or improper service. This guarantee does not apply to machines and / or components which have been altered, changed, or modified in any way, or subjected to use beyond recommended capacities and specifications. Electrical components are subject to respective manufacturers' warranties. All goods returned defective shall be returned prepaid freight to Evolution Power Tools. Evolution Power Tools reserves the right to optionally repair or replace it with the same or equivalent item. There is no warranty – written or verbal – for consumable accessories such as (following list not exhaustive) blades, cutters, drills, chisels or paddles etc. In no event shall Evolution Power Tools be liable for loss or damage resulting directly or indirectly from the use of our merchandise or from any other cause. Evolution Power Tools is not liable for any costs incurred on such goods or consequential damages. No officer, employee or agent of Evolution Power Tools is authorized to make oral representations of fitness or to waive any of the foregoing terms of sale and none shall be binding on Evolution Power Tools.

Questions relating to this limited guarantee should be directed to the company's head office, or call the appropriate Helpline number.

SAFETY FIRST

Before attempting to operate this power tool, the following basic safety precautions should always be taken to reduce the risk of fire, electric shock and personal injury:

- Read the Instruction Manual to understand the safety instructions, application, limitation and potential hazards associated with this power tool.
- Only use genuine Evolution replacement parts. The use of unauthorised parts may be dangerous and could result in damage to the machine and / or injury to the operator.

TECHNICAL SPECIFICATION

Max Machine Height (mm):	670 (26-1/4")
Min Machine Height (mm):	360 (14-1/8")
Machine Width (mm):	180 (7")
Machine Depth (mm):	300 (11-3/4")
Machine Weight (Kg):	11.2 (25lbs)
Rack Stroke (mm):	130 (5-1/4")

Rated Motor Power (Watts):	110 V/1200W (10A)
UK Voltage 1:	110V ~ 50/60Hz
UK Voltage 2:	230V ~ 50/60Hz
US Voltage 3:	120V ~ 50/60Hz
Rated Current (Amps) 240V:	5.4
IP Rating:	20
Spindle Speed – No Load (min^{-1}/rpm):	470
Number of Speeds:	Single
Power Cord Length (Mtr/Yr):	2.1m (2-1/3yr)
Insulation Class:	1

Max Annular Cutting Capacity (mm):	42 (1-5/8")
Max Cutting Depth (mm):	50 (2")
Standard Twist Drill Capacity (mm):	13 (1/"2)
Magnet Dimension (mm):	40 x 90 x 180 (1-3/4"x3-3/4" x 7")
Magnet Adhesion Stage 2 (Kg F):	1300 (2850 lbs)
Min Plate Thickness (mm):	10 (1/2")

Sound Pressure Level L_{PA}:	89.4dB(A) K=3dB(A)
Sound Power Level L_{WA}:	102.4B(A) K=3dB(A)
Hand Arm Vibration $\mathbf{a}_h$:	0.629m/s^2 K=1.5m/s^2

Note: The vibration measurement was made under standard conditions in accordance with BS EN 61029 – 1:2009.

VIBRATION

⚠ **WARNING: When using this machine the operator can be exposed to high levels of vibration transmitted to the hand and arm. It is possible that the operator could develop "Vibration white finger disease" (Raynaud syndrome). This condition can reduce the sensitivity of the hand to temperature as well as producing general numbness. Prolonged or regular users of this machine should monitor the condition of their hands and fingers closely. If any of the symptoms become evident, seek immediate medical advice.**

- The measurement and assessment of human exposure to hand-transmitted vibration in the workplace is given in: BS EN ISO 5349-1:2001 and BS EN ISO 5349-2:2002
- Many factors can influence the actual vibration level during operation e.g. the work surfaces condition and orientation and the type and condition of the machine being used. Before each use, such factors should be assessed, and where possible appropriate working practices adopted. Managing these factors can help reduce the effects of vibration:

Handling

- Handle the machine with care, allowing the machine to do the work.
- Avoid using excessive physical effort on any of the machines controls.
- Consider your security and stability, and the orientation of the machine during use.

Work Surface

- Consider the work surface material; its condition, density, strength, rigidity and orientation.

⚠ **WARNING:** The vibration emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used. The need to identify safety measures and to protect the operator are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle, such as the times the tool is switched off, when it is running idle, in addition to trigger time).

SAFETY LABELS & SYMBOLS

WARNING: Do not operate machine if warning and/or instruction labels are missing or damaged. Contact Evolution Power Tools for replacement labels.

Note: All or some of the following symbols may appear in the manual or on the product.

SYMBOL	MEANING
	Eye protection should be worn at all times when using this tool.
	Hard Hat - Head protection should be worn at all times whilst using this tool, to protect from overhead hazards
	Ear protection / Ear defenders should be worn at all times whilst using this tool, this tool exceed 85dB(A)
	Electrical enclosure - risk of electric shock.
	Read and understand the instruction manual - before operating this tool.
	Caution ! / Attention !
	Instruction Manual
	WEEE - Waste Electrical and Electronic Equipment This machine should be disposed of as Electrical & Electronic Waste.
	Fuse

INTENDED USE

- This power tool is intended to be used for drilling holes with annular cutters and twist drills, in an industrial environment.
- The machine is designed to be held onto a magnetisable surface using its electro-magnetic base.
- This power tool should be used in a weather protected environment, and be used with the accessories provided, or Evolution Power Tools recommended accessories only.
- The power tool can be used vertically, horizontally and inverted, provided the magnetic adhesion and work environment allow.

WARNING: To prevent ingress of fluids into the electrical system, cutting paste should be used rather than cutting fluid when using the machine in the inverted position.

PROHIBITED USES

- This power tool should never be used without a ground or protective earth connection.
- This power tool should not be used in a potentially explosive environment.
- This power tool should not be use in a wet or humid environment where water could be drawn into the power tools cooling and ventilation system.
- If the power tool is used in the inverted or horizontal position, cutting fluids should not be used to prevent ingress of fluids into the electrical system. Cutting paste should be used instead.
- This power tool should never be positioned on a work piece between the electrode and ground of an arc type welder. Damage to the machine will result as the welder will ground through the power tools ground or earth cable.
- This power tool should not be used where the voltage is abnormally lower than the rated voltage, subject to voltage tolerances. Check the power tool rating plate, check the voltage available.

ELECTRICAL SAFETY - EU ONLY!

⚠ **WARNING:** Operating on a lower than rated voltage will result in the electro magnet being at reduced power and the machine may become insecure whilst cutting.

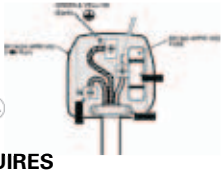
CONNECTION OF THE MAINS PLUG - CLASS 1 **MACHINES - EU ONLY**

This product is fitted with the correct moulded plug for the designated sales market. The plug meets the requirements of international standards, and must be connected to a supply voltage that is equal to that stated on the rating label. If the plug or mains supply lead are damaged they must be replaced with a complete assembly that is identical to the original. Adhere to the requirements for mains electricity supply connection that applies in your Country. If in doubt consult a qualified electrician.

CONNECTION OF THE MAINS PLUG - CLASS 1 **MACHINES - UK ONLY**

IMPORTANT: The wires in the mains lead fitted to this product are coloured in accordance with the following code:

Brown: Live (L)
Blue: Neutral (N)
Green and Yellow or Green: Earth (E) ⏚



THIS PRODUCT REQUIRES A CONNECTION TO EARTH.

3 PIN PLUG MUST COMPLY TO BS1363/A. FUSE MUST COMPLY TO BS1362.

If for any reason the moulded 13 amp plug fitted to this product requires replacement it must be wired in accordance with the following instructions:

Connect the **Blue** wire to the terminal marked **Neutral (N).**
Connect the **Brown** wire to the terminal marked **Live (L).**
Connect the **Green and Yellow** wire to the terminal marked **Earth E**

DO NOT CONNECT THE BROWN (LIVE) OR BLUE (NEUTRAL) TO THE EARTH PIN MARKED E ⏚ ON THE 3 PIN PLUG.

Ensure that the outer insulation is gripped by the cord grip and that the wires are not trapped when replacing the plug cover.

A **13 amp (BS1362)** fuse must be fitted in the plug. ⏚

IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN.

There are no user serviceable parts inside except those referred to in the manual. Always refer servicing to qualified service personnel. Never remove any part of the casing unless qualified to do so; this unit contains dangerous voltages.

OUTDOOR USE

⚠ **WARNING:** For your protection, if this tool is to be used outdoors, it should not be exposed to rain or used in damp locations, as water entering the power tool will increase the risk of electric shock. Do not place the tool on damp surfaces. For added protection use a residual current device (R.C.D.) that will interrupt the supply if the leakage current to earth exceeds 30mA for 30ms. Always check the operation of the residual current device (R.C.D.) before using the machine.

If an extension cable is required it must be a suitable type for use outdoors and so labelled.

These extension cords are rated for outdoor use and reduce the risk of electric shock. The manufacturers instructions should be followed when using an extension cable.

Note: If the mains cable requires replacing it must be replaced with an identical one and be fitted by a qualified person.

(These General Power Tool Safety Instructions are as specified in BS EN 60745-1:2009 & EN 61029-1:2009)

POWER TOOL GENERAL SAFETY INSTRUCTIONS

WARNING: Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.
The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1) General Power Tool Safety Warnings [Work area safety]
a) Keep work area clean and well lit. *Cluttered or dark areas invite accidents.*
b) Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gasses or dust. *Power tools create sparks which may ignite the dust or fumes.*
c) Keep children and bystanders away while operating power tool. *Distractions can cause you to lose control.*

2) General Power Tool Safety Warnings [Electrical Safety]
a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. *Unmodified plugs and matching outlets will reduce the risk of electric shock.*
b) Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. *There is an increased risk of electric shock if your body is earthed or grounded.*
c) Do not expose power tools to rain or wet conditions. *Water entering a power tool will increase the risk of electric shock.*
d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. *Damaged or entangled cords increase the risk of electric shock.*
e) When operating a power tool outdoors, use an extension cord suitable for outdoor use. *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
f) If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. *Use of an RCD reduces the risk of electric shock.*

3) General Power Tool Safety Warnings [Personal Safety].
a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.
A moment of inattention while operating power tools may result in serious personal injury.
b) Use personal protective equipment. Always wear eye protection. *Protective equipment such as dust masks, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.*
c) Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and or battery pack, picking up or carrying the tool. *Carrying power tools with your finger on the switch or energising the power tools that have the switch on invites accidents.*
d) Remove any adjusting key or wrench before turning the power tool on. *A wrench or key left attached to a rotating part of a power tool may result in personal injury .*
e) Do not overreach. Keep proper footing and balance at all times. *This enables better control of the power tool in unexpected situations.*
f) Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. *Loose clothes, jewellery or long hair can be caught in moving parts.*
g) If devices are provided for the connection of dust extraction and collection facilities, ensure that these are connected and properly used. *Use of dust collection can reduce dust-related hazards.*

4) General Power Tool Safety Warnings [Power tool use and care].
a) Do not force the power tool. Use the correct power tool for your application. *The correct power tool will do the job better and safer at a rate for which it was designed.*
b) Do not use the power tool if the switch does not turn it on or off. *Any power tool*

that cannot be controlled with the switch is dangerous and must be repaired.
c) Disconnect the power tool from the power source and/or battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. *Such preventative safety measures reduce the risk of starting the power tool accidentally.*
d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these Instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*
e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of moving parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. *Many accidents are caused by poorly maintained power tools.*
f) Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
g) Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. *Use of the power tool for operations different from those intended could result in a hazardous situation.*
5) General Power Tool Safety Warnings [Service]
a) Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

MAG DRILL SPECIFIC SAFETY INSTRUCTIONS

WARNING: Mains Power Supply Security. Due to the nature of operation of this machine, it is of the utmost importance to ensure the security and continuity of the mains power supply.

Ensure that this machine has a dedicated power supply, and use a lock on device to ensure that the mains power supply cannot be interrupted or compromised accidentally.

Do not use other appliances on the same power socket, as any variation in voltage caused by other connected appliances could result in the magnet deactivating. Always use the tool on its own dedicated power socket.

Where the power supply is provided by an 'onsite' generator set, ensure that the generator set is reliable and well maintained, and that the fuel tank contains sufficient fuel to allow completion of the task. The addition of warning labels is strongly recommended.

1) TRANSPORTING and HANDLING.

Mag Drills are heavy machines, care must be taken when transporting and handling**.**

- When transporting or moving the Mag Drill, always use the carrying handle or other carrying aids provided.
- Always ensure that the dovetail slide is in its lowest position and locked in place.
- Do not transport or move the Mag Drill with a cutter attached.
- If the coolant feed system is fitted, ensure that the coolant feed tap is in the off position, or the coolant system has been drained.
- If the Mag drill is to be transported in a vehicle ensure that it is laid on its side and is secured to prevent movement.
- Do not transport the Mag Drill with the mains cord and plug dragging along the ground.
- Never carry or drag the machine using the mains cord.

Carrying your Magnetic Drill

Safety Advice

- Although compact, this Magnetic Drill is heavy. To reduce the risk of back injury, get competent help, if required, whenever you have to lift the drill.
- To reduce the risk of back injury, hold the tool close to your body when lifting. Bend your knees so you can lift with your legs, not your back. Lift by using the transportation/lifting handle.

- Never carry the Magnetic Drill by the power cord. Carrying the Magnetic Drill by the power cord could cause damage to the insulation or the wire connections resulting in electric shock or fire.
- Before moving the Magnetic Drill tighten the auxiliary slide locking screw to guard against sudden unexpected movement.
- Lock the Drilling Head in its lowest position.

2) BEFORE USING THE MAGNETIC DRILL

- Check the mains cord and plug for any damage. If damaged it must be replaced before use.
- Check the complete machine for any signs of damage. If the machine is damaged it must not be used until it has been repaired.
- Check the security and condition of the guard. This machine must not be used without the guard being fitted.
- Ensure that the feed handles are attached securely.
- Check that the dovetail slide is correctly adjusted and operates smoothly without any binding or excessive sideways movement. The cutting head should not fall freely under its own weight.
- Check the condition of the webbing safety strap and adjustable buckle for any signs of damage or fraying. If damaged it must be replaced.
- Check that the secondary/auxiliary slide is securely locked by the locking lever. **(refer to Fig. 9)**

3) ADJUSTING GIBS (Dovetail Slides) FREE PLAY

Periodically check, lubricate and adjust as necessary. When adjusting the gib strips the following procedure must be followed.

- Using the supplied 3mm Hex Key loosen slightly the 3 cap screws. **(Fig 12(a)** shows 1 of the cap screws).With all 3 cap screws loosened, ensure that the main slide is at the lowest position.
- Using the 2 mm Hex Key supplied turn the lower and middle adjusting screws to eliminate any free movement. **(Fig 12 (b)** shows 1 of the adjusting screws).
- Move the main slide upwards until its top edge is level with the top of the dovetail slide way. Turn the upper adjusting screw to take up any free movement.
- Operate the crank handle to move the slide up and down. There should be no free play, yet no binding anywhere throughout the range of travel.
- If necessary repeat the above procedure several times to ensure that all free movement has been eliminated and that the machine head moves up and down freely without any binding and without any side to side movement.
- Re-tighten the 3 cap screws when adjustment is complete.

4) COOLANTS and LUBRICANTS.

The use of Coolants or lubricants will ease the cutting operation and prolong the life of the cutter and the machine.

- When using coolants or lubricants, ensure that they do not run down the mains cord to the mains plug and supply outlet. Do not allow coolants or lubricants to enter the machines ventilation openings.
- When using the machine inverted or on vertical surfaces use cutting paste instead of a liquid cutting fluid.
- If the machine is to be used to cut materials that create dust, such as cast iron, dust extraction equipment (not supplied) should be used and/or the operator should wear a suitable respiratory protection mask.

5) PREPARATION and SETTING UP.

The Electromagnet on this machine is designed to adhere to ferrous metallic surfaces only.

WARNING: The electro magnet fitted to this machine is a two stage magnet. With the machine positioned, and the magnet switched 'ON' but the motor switched 'OFF' the magnet is at 50% strength. The magnet only reaches full strength when both the Magnet and Motor switches are in the **'**ON' position.

WARNING: The use on any material whose thickness is less than that specified in this Instruction Manual will progressively reduce the magnetic performance, and could result in a potentially dangerous condition arising.

- Always prepare the material surface before attaching the machine. The material surface must be clean, flat and free from rust, protective coatings, grease or other debris such as chippings or swarf from previously drilled holes.
- Always check the surface of the magnetic base ensuring that it is not damaged and is clear of debris such as chippings or swarf from previously drilled holes.
- Never use this machine on a structure where arc welding is taking place. Damage to the machine will result as the welder will ground through the power tools ground or earth cable.

6) DURING CUTTING OPERATIONS.

WARNING: The swarf and the slug produced will be hot and sharp.

- When using annular cutters ensure that the slug ejected at the end of the cut will not endanger anyone in the vicinity.
- If working at height some form of collection device for the ejected slug may be necessary.
- Care should be taken with the ejected slug, this will be both hot and sharp, gloves should be worn when handling the slug.
- This power tool can be used on a vertical surface or upside down provided there is sufficient magnetic adhesion, extra care should be taken when drilling vertically or inverted . When using the machine vertically or inverted it is possible hot and sharp swarf or chips may fall. Always wear appropriate personal protective equipment.

7) SAFETY STRAP OR SAFETY CHAIN.

WARNING: The electro-magnet base on this power tool can deactivate if the power supply is interrupted or suffers an electrical malfunction.

- To prevent possible operator injury, the safety strap or chain supplied should be used at all times to provide extra security in the event of supply failure or electrical malfunction.

Note: When drilling some very large flat, horizontal plates, the fitting of the safety strap or chain may be inapplicable. Consult the responsible person for guidance.

- The safety strap or chain should be attached to the fixing points provided and checked for security before commencing any and every drilling operation.

GETTING STARTED

UNPACKING

Caution: This packaging contains sharp objects. Take care when unpacking. This machine could require two persons to lift, assemble and move this machine. Remove the machine, together with the accessories supplied from the packaging. Check carefully to ensure that the machine is in good condition and account for all the accessories listed in this manual. Also make sure that all the accessories are complete. If any parts are found to be missing, the machine and its accessories should be returned together in their original packaging to the retailer. Do not throw the packaging away; keep it safe throughout the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Do not let children play with empty plastic bags due to the risk of suffocation.

ITEMS SUPPLIED (UK MARKET)

DESCRIPTION	QUANTITY	PART No
Instruction Manual	1	N/A
Coolant Tank System	1	EV42SM1
Handles	3	EV42S65
Safety Strap	1	EV42S93
Safety Guard	1	EV42S75
Safety Guard Fixing Screws	2	EV43S82
Hex Key 2mm	1	EV42S90
Hex Key 3mm	1	EVS4291
Hex Key 4mm	1	EV42S92
Hex Key 5mm	1	EV42S94
Blow Moulded Case	1	EV42S300

ACCESSORIES SUPPLIED TO OTHER MARKETS MAY VARY

Additional Accessories Available

In addition to the accessories supplied with this machine the following accessories are available from Evolutions online shop at www.evolutionpowertools.com or from your local retailer.

DESCRIPTION	PART No
Chuck Adaptor	HTA 47
Chuck & Chuck Key 13mm	HTA 153
Countersink Bit 0-30mm	HTA 030
Cutter Short 25mm Lx12-42mm Dia	HTxxS
Cutter Long 50mm Lx12mm-42mm Dia	HTxxL

MACHINE OVERVIEW

Photograph showing machine with annular cutter fitted

1. MAGNET ON/OFF SWITCH

2. MOTOR ON/OFF SWITCH

3. GUARD

4. ANNULAR CUTTER

5. SECONDARY SLIDE LOCKING LEVER

6. SAFETY STRAP

7.COOLANT TANK

8. SPINDLE BOSS & FEED HANDLES

MACHINE OVERVIEW

Photograph showing machine with 3 jaw chuck & twist drill fitted

1. 3 JAW CHUCK

2. DRILL BIT

Fig. 1

Fig. 2

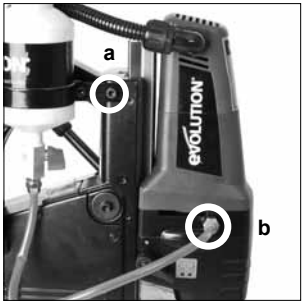


Fig. 3

ASSEMBLY and PREPARATION

WARNING: This machine must not be connected to a power source until all assembly and preparation has been completed and a safety check carried out.

Assembly

Remove the machine from the case and check that all accessories are present and correct. Place the machine onto a clean, sturdy work surface.

- Attach the three handles into the spindle boss ensuring that they are screwed fully home. **(Fig. 1)**
- Attach the Safety Guard and secure in place using the supplied fixing screws. **(Fig. 2)**
- The coolant system should be fastened to the machine using the ø 6 mm (1/4") socket headed screw inserted into the threaded hole located at the top Left Hand side of the machines carriage. **(Fig. 3 a)**
- Screw the lubrication quick connector into the threaded hole located just below the motor housing on the left hand side of the machine. **(Fig. 3b)**
- Insert the free end of the delivery pipe into the quick connector.

Note: To release the delivery pipe from the quick connector push the collar towards the brass union and withdraw the delivery pipe

Note: For some operations it may be convenient to remove the coolant tank and supply pipe, and to use alternative coolant application methods.

OPERATING INSTRUCTIONS

TESTING

WARNING: This machine has CLASS 1 insulation and MUST be earthed. Any power socket that this machine is connected to must be grounded to earth. Ensure that both operating switches are in the 'OFF' position before connecting the power cord to the socket.

WARNING: The power cord assembly is a custom terminated one. Replacement should only be carried out by a qualified technician. Only use replacement parts recommended by Evolution Power Tools.

- Place the machine onto a piece of clean 10 mm thick Mild Steel plate that is larger than the magnetic base of the machine.
- Connect the 13A plug into a 13A mains supply socket **(UK Only).**
- Switch on the socket.

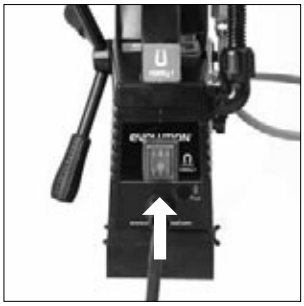


Fig. 4

- Operate the **Red** switch **(Fig. 4)** situated at the rear of the machine to energise the magnet.
- Check that the machine is firmly attached to the Mild Steel plate.
- Operate the **Black** motor switch located on the top of the machine. **(Fig. 5)**
- Allow the motor to run for a few seconds to check for any unusual noise or vibration.
- Do not use the machine if any vibration or unusual noises are detected or if magnetic adhesion is questionable. Have the machine serviced by a qualified person, or if under guarantee refer to the guarantee agreement.
- Turn 'OFF' the machine when all testing has been completed.

INSTALLING A CUTTER

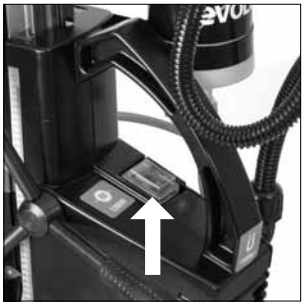


Fig. 5

Select a cutter suitable for the operation to be performed. Check the cutter to ensure that it is sharp and is not damaged in any way.

- Insert the pilot pin into the cutter ensuring that it slides smoothly. **(Fig.6)**
- Raise the cutting head to its highest position.
- Check that the cutter securing grub screws located in the spindle are not protruding into the spindle bore. **(Fig.7)**
- Align the two flats on the cutter shaft with the grub screws in the spindle.
- Start to tighten one of the grub screws and at the same time slightly rotate the cutter backwards and forwards until the grub screw is fully tightened. This will ensure that the grub screw is located squarely onto the flat preventing the cutter from becoming loose.
- Tighten the remaining grub screw.

Fig. 6

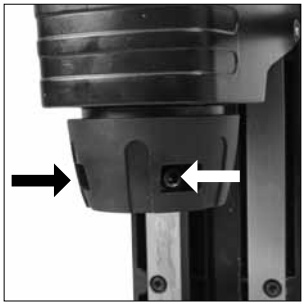


Fig. 6

SETTING UP

⚠ **WARNING:** Before using the machine ensure that you have read the sections on the intended and prohibited of use of this machine.

This machine should only be used for hole boring/drilling whilst attached to the work piece by the electro-magnetic base.

⚠ **WARNING:** This machine is intended for use at any angle, but only if the electro-magnet is in full working order and has sufficient hold on the work piece material.

The safety strap or chain should be attached in case of power failure or machine malfunction.
The safety strap or chain should NOT be used as an alternative to the magnet for clamping purposes.

Always ensure the strap or chain is correctly fitted and the machine is secure BEFORE starting the machine.

COOLANT / LUBRICANT FLOW.

Note: It is recommended that a Soluble Oil is used as other coolants/lubricants may have a high viscosity and may not flow easily to the cutter.

Ensure that the Coolant/Lubrication bottle is filled with suitable Coolant/Lubrication liquid and that the ON/OFF tap is in the ON position.

- Ensure that the work piece is flat, clean and free from any rust, coatings or other contamination.
- Position the machine onto the work piece.
- Connect the 13A plug into a 13A (120V/16A plug if US) mains supply socket and switch on at the socket.
- Energise the magnetic base by selecting the ON position of the RED switch located at the rear of the machine **(refer to Fig.4).**

The machine should now be firmly attached to the mild steel plate.

Before commencing the cutting operation check that there is sufficient Coolant/Lubrication flow at the cutter.

Fig. 8

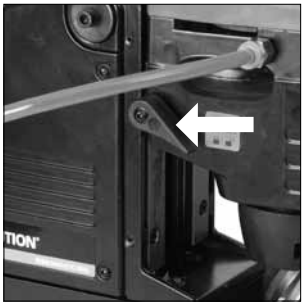


Fig. 9

To ensure Coolant/Lubrication flow:

- Release the Coolant/Lubrication bottle cap. This will prevent a vacuum being created that will stop the Coolant/Lubrication fluid from flowing.
- Gently squeeze the Coolant/Lubrication bottle to force the Coolant/Lubrication through to the cutter.
- Lower the cutting head towards the work piece until the cutter teeth touch the work piece and the pilot pin is depressed, then raise the cutting head.
- Continue this process until the Coolant/Lubrication fluid is flowing onto the work piece.

OPERATION EVO 42

Note: This machine is fitted with the latest Anti Stall Technology (AST).
If the cutting forces result in the motor stalling, the electronics will switch off the motor, preventing burnout. The magnet will remain energised holding the machine safely in position.

To reset after AST activation:

- Set the motor switch to the **OFF** position.
- Back off the cutter from the material.
- **Wait 3-5 seconds** before restarting by switching the motor switch to the ON position.

Note: If after activation of the AST system or at any other time during operation the machine fails to restart, or there is no magnetic adhesion check the 240V/10A or 120V/16A (5x20mm) Surge Fuse. **(Fig. 8)** If it has blown, it must be replaced with an identical type.

MAKING A CUT

⚠ **WARNING:** Ensure that the secondary slide is locked. The locking lever has a Left Hand thread and is located on the lower Left Hand side of the gearbox housing. **(Fig. 9)**

This must be fully tightened and will prevent any lateral movement of the cutting head during the cutting operation.

⚠ **WARNING:** On completion of the cut the pilot bin will eject the material slug. This slug will be very hot with sharp edges. Use protective gloves when handling the slug.
If the slug fails to be ejected from the cutter this could be caused by the slug becoming twisted inside the cutter. To release the slug lower the cutter onto a flat area of the work piece, this will square up the slug and allow it to be ejected.

AUXILIARY 13mm 3 JAW CHUCK. (UK Market only)
This machine is supplied with an auxiliary 3 jaw chuck to enable the use of standard parallel shank twist drill bits.

Fig. 10

Fig. 11

- Correctly position the machine on the work piece, with the electro magnet energised and with the safety strap secured in place.
- Check for sufficient Coolant/Lubrication fluid flowing at the cutter.
- Start the motor by selecting the ON position of the BLACK switch, located on top of the machine. **(refer to Fig.5)**
- Using the feed handles slowly lower the cutting head until the cutter makes contact with the work piece.
- Continue to apply only sufficient pressure to allow the cutter to cut freely through the work piece.
- Depending on the thickness of the workpiece periodically raise the cutter to clear the swarf build up prior to continuing the cut.

Note: When fitted, the 3 jaw chuck (and any twist drill fitted into it) are considerably longer than any of the annular cutters usually fitted into this machine. To accommodate this greater overall length the secondary slide facility of the machine must be employed.
The locking lever for the secondary slide has a left hand thread and is found on the lower Left Hand side of the gearbox housing. **(Fig. 9)** Loosen this lever to adjust the height (length) of the machine (max 670mm) to suit the drilling application.
Once adjustment has been satisfactorily completed, ensure that the secondary slide is securely tightened using the locking lever.

To fit the chuck:

- Screw the 3 jaw auxiliary chuck into the threaded bore of the chuck adaptor. **(Fig. 10)**
- Align the two flats on the chuck adaptor with one of the screws in the spindle. **(Fig.11)**
- Start to tighten the grub screw and at the same time slightly rotate the chuck adaptor backwards and forwards until the grub screw is fully tightened. This will ensure that the grub screw is located squarely onto the flat preventing the chuck adaptor from becoming loose.
- Tighten the remaining grub screw.

MAINTENANCE

Note: Any maintenance must be carried out with the machine switched off and disconnected from the mains/battery power supply.

Check that all safety features and guards are operating correctly on a regular basis. Only use this machine if all guards/safety features are fully operational.

All motor bearings in this machine are lubricated for life. No further lubrication is required.

Use a clean, slightly damp cloth to clean the plastic parts of the machine. Do not use solvents or similar products which could damage the plastic parts.

Fig. 12 A

Fig. 12 B

WARNING: Do not attempt to clean by inserting pointed objects through openings in the machines casings etc. The machines air vents should be cleaned using compressed dry air.

Excessive sparking may indicate the presence of dirt in the motor or worn out carbon brushes.

If this is suspected have the machine serviced and the brushes replaced by a qualified person.

Adjusting Gibs (Dovetail Slides) Free Play

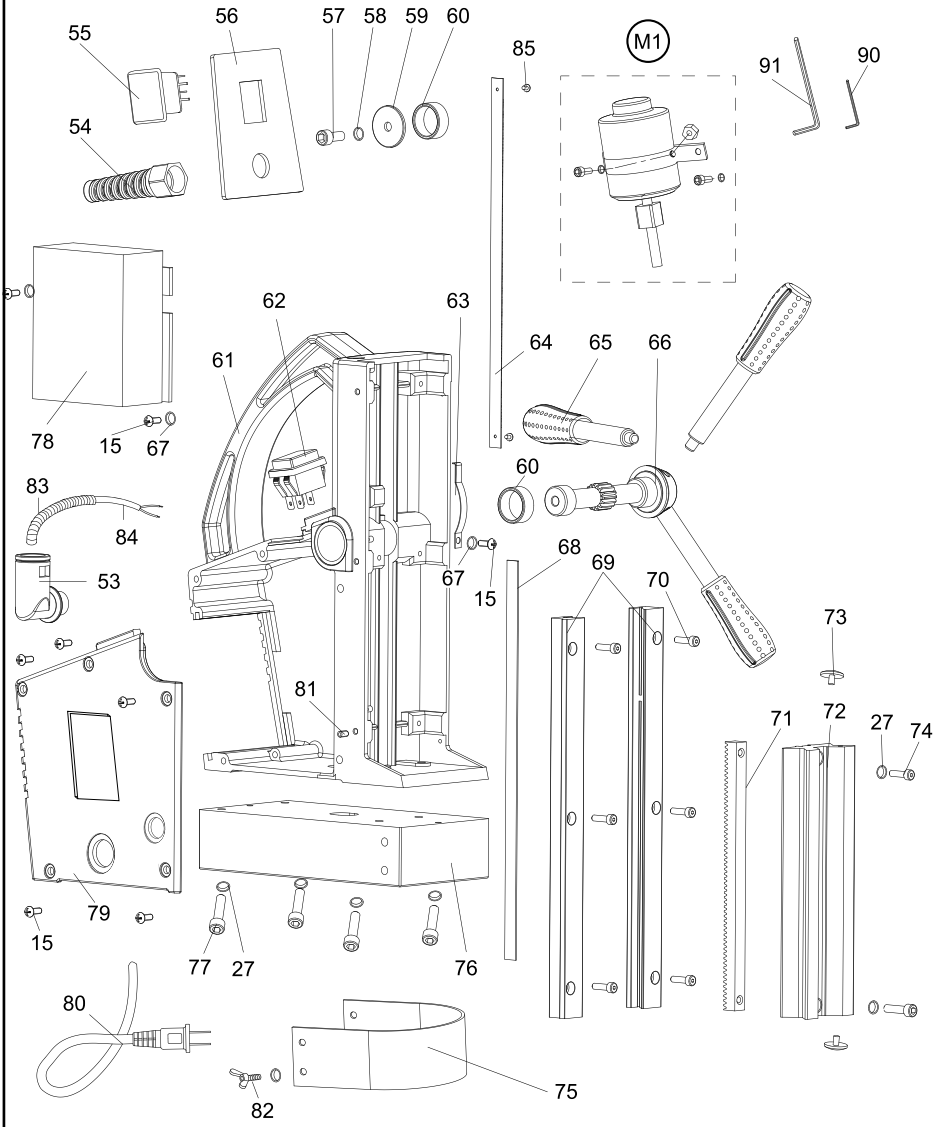
Periodically check, lubricate and adjust as necessary. When adjusting the gib strips the following procedure must be followed.

- Using the supplied 3mm Hex Key loosen slightly the 3 cap screws. **(Fig 12(A)** shows 1 of the cap screws).With all 3 cap screws loosened, ensure that the main slide is at the lowest position.
- Using the 2 mm Hex Key supplied turn the lower and middle adjusting screws to eliminate any free movement. **(Fig 12 (B)** shows 1 of the adjusting screws).
- Move the main slide upwards until its top edge is level with the top of the dovetail slide way. Turn the upper adjusting screw to take up any free movement.
- Operate the crank handle to move the slide up and down. There should be no free play, yet no binding anywhere throughout the range of travel.
- If necessary repeat the above procedure several times to ensure that all free movement has been eliminated and that the machine head moves up and down freely without any binding and without any side to side movement.
- Re-tighten the 3 cap screws when adjustment is complete.

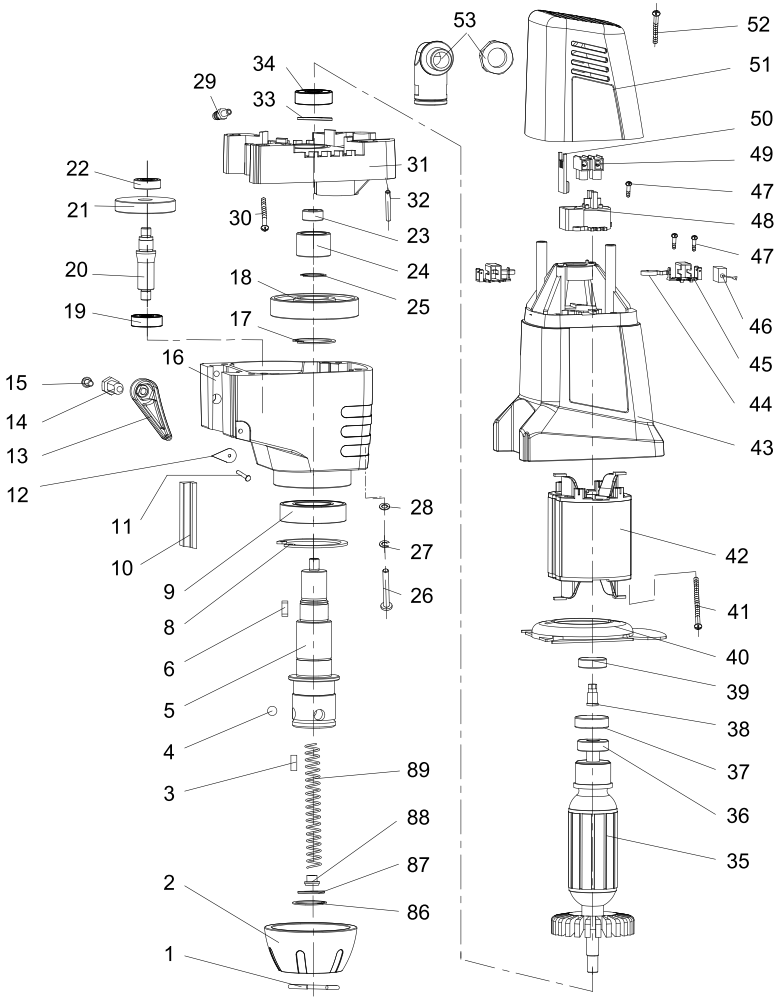
ENVIRONMENTAL PROTECTION

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

SERVICED PARTS LIST



SERVICED PARTS LIST



DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY
In accordance with EN ISO 17050-1:2004

The manufacturer of the product covered by this Declaration is.

Evolution Power Tools
Venture One
Longacre Close
Holbrook Industrial Estate
Sheffield
S20 3FR

The manufacturer hereby declares that the machine as detailed in this declaration fulfils all the relevant provisions of the Machinery Directive and other appropriate directives as detailed below.

The manufacture further declares that the machine as detailed in this declaration, where applicable, fulfils the relevant provisions of the Essential Health and Safety requirements.

The Directives covered by this Declaration are as detailed below:

2006/42/EC Machinery Directive.
2006/95/EC. Low Voltage Equipment Directive.
2004/108/EC. Electromagnetic Compatibility Directive,
93/68/EC. The CE Marking Directive.
2002/95/EC. The Restriction of the Use of certain Hazardous Substances in Electrical Equipment (RoHS) Directive
2002/96/EC as amended by 2003/108/EC The Waste Electrical and Electronic Equipment (WEEE) Directive.

And is in conformity with the applicable requirements of the following documents:

EN61029-1 :2009
ENISO12100-2/A1:2009
EN55014-1 :2006
EN55014-2 :/A2:2008
EN61000-3-2 :2006/A2:2009
EN61000-3-3: 2008

Product Details:

Description: 42mm (1-5/8") Industrial Magnetic Drilling System
Evolution Model No: EVO42
Brand Name: EVOLUTION
Voltage: UK: 230V + 110V, US: 120V
Intput: 1200W (10A)

The technical documentation required to demonstrate that the product meets the requirements of directive has been compiled and is available for inspection by the relevant enforcement authorities, and verifies that our technical file contains the documents listed above and that they are the correct standards for the product as detailed above.
Name and address of technical documentation holder.

Signed: Print: Steven Bulloss: Operations Director Year that CE was first applied 09

Date: 21/05/2012.

Evolution Power Tools
Venture One, Longacre Close, Holbrook Industrial Estate, Sheffield, S20 3FR

Notes:

www.evolutionsteel.com